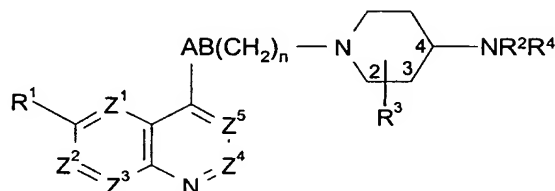


Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 (Currently Amended). A compound of formula (I) or a pharmaceutically acceptable salt or N-oxide thereof:



wherein:

one of Z¹, Z² and Z³ is N, and Z⁴, Z⁵ and remainder of Z¹, Z² and Z³ not equal to N are CR^{1a};

R¹ and R^{1a} are independently hydrogen; hydroxy; (C₁₋₆)alkoxy optionally substituted by (C₁₋₆)alkoxy, amino, piperidyl, guanidino or amidino optionally N-substituted by one or two (C₁₋₆)alkyl, acyl or (C₁₋₆)alkylsulphonyl groups, CONH₂, hydroxy, thiol, (C₁₋₆)alkylthio, heterocyclylthio, heterocyclyloxy, arylthio, aryloxy, acylthio, acyloxy or (C₁₋₆)alkylsulphonyloxy; (C₁₋₆)alkoxy-substituted(C₁₋₆)alkyl; halogen; (C₁₋₆)alkyl; (C₁₋₆)alkylthio; nitro; azido; acyl; acyloxy; (C₁₋₆)alkylsulphonyl; (C₁₋₆)alkylsulphoxide; arylsulphonyl; arylsulphoxide or an amino, piperidyl, guanidino or amidino group optionally N-substituted by one or two (C₁₋₆)alkyl, acyl or (C₁₋₆)alkylsulphonyl groups; and

additionally when Z⁵ is CR^{1a}, R^{1a} may be (C₁₋₄)alkyl-CO₂H or (C₁₋₄)alkyl-CONH₂ in which the C₁₋₄ alkyl is substituted by R¹²; (C₁₋₄)alkyl substituted by cyano, amino or guanidino; aminocarbonyl optionally substituted by hydroxy, (C₁₋₆)alkyl, hydroxy(C₁₋₆)alkyl, aminocarbonyl(C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkylsulphonyl, trifluoromethylsulphonyl, (C₁₋₆)alkenylsulphonyl, (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl, (C₂₋₆)alkenylcarbonyl, ~~CH(R¹³)CO₂H or CH(R¹³)CONH₂ optionally further substituted by (C₁₋₆)alkyl, hydroxy(C₁₋₆)alkyl, aminocarbonyl(C₁₋₆)alkyl or (C₂₋₆)alkenyl; hydroxy(C₁₋₆)alkyl; carboxy; cyano or (C₁₋₆)alkoxycarbonyl;~~

wherein R¹³ is a natural α-amino acid side chain or its enantiomer;

R² is hydrogen, or (C₁₋₄)alkyl or (C₁₋₄)alkenyl optionally substituted with 1 to 3 groups selected from:

amino optionally substituted by one or two (C₁₋₄)alkyl groups; carboxy; (C₁₋₄)alkoxycarbonyl; (C₁₋₄)alkylcarbonyl; (C₂₋₄)alkenyloxycarbonyl; (C₂₋₄)alkenylcarbonyl; aminocarbonyl, wherein the amino group is optionally substituted by hydroxy, (C₁₋₄)alkyl, hydroxy(C₁₋₄)alkyl, aminocarbonyl(C₁₋₄)alkyl, (C₂₋₄)alkenyl, (C₁₋₄)alkylsulphonyl, trifluoromethylsulphonyl, (C₁₋₄)alkenylsulphonyl, (C₁₋₄)alkoxycarbonyl, (C₁₋₄)alkylcarbonyl, (C₂₋₄)alkenyloxycarbonyl or (C₂₋₄)alkenylcarbonyl; cyano; tetrazolyl; 2-oxo-oxazolidinyl optionally substituted by R¹⁰; 3-hydroxy-3-cyclobutene-1,2-dione-4-yl; 2,4-thiazolidinedione-5-yl; tetrazol-5-ylaminocarbonyl; 1,2,4-triazol-5-yl optionally substituted by R¹⁰; 5-oxo-1,2,4-oxadiazol-3-yl; thiol; halogen; (C₁₋₄)alkylthio; trifluoromethyl; azido; hydroxy optionally substituted by (C₁₋₄)alkyl, (C₂₋₄)alkenyl, (C₁₋₄)alkoxycarbonyl, (C₁₋₄)alkylcarbonyl, (C₂₋₄)alkenyloxycarbonyl, (C₂₋₄)alkenylcarbonyl; oxo; (C₁₋₄)alkylsulphonyl; (C₂₋₄)alkenylsulphonyl; or (C₁₋₄)aminosulphonyl, wherein the amino group is optionally substituted by (C₁₋₄)alkyl or (C₂₋₄)alkenyl;

R³ is hydrogen; or

R³ is in the 2-, 3- or 4-position and is:

carboxy; (C₁₋₆)alkoxycarbonyl; aminocarbonyl, wherein the amino group is optionally substituted by hydroxy, (C₁₋₆)alkyl, hydroxy(C₁₋₆)alkyl, aminocarbonyl(C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkylsulphonyl, trifluoromethylsulphonyl, (C₁₋₆)alkenylsulphonyl, (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl or (C₂₋₆)alkenylcarbonyl and optionally further substituted by (C₁₋₆)alkyl, hydroxy(C₁₋₆)alkyl, aminocarbonyl(C₁₋₆)alkyl or (C₂₋₆)alkenyl; cyano; tetrazolyl; 2-oxo-oxazolidinyl optionally substituted by R¹⁰; 3-hydroxy-3-cyclobutene-1,2-dione-4-yl; 2,4-thiazolidinedione-5-yl; tetrazol-5-ylaminocarbonyl; 1,2,4-triazol-5-yl optionally substituted by R¹⁰; or 5-oxo-1,2,4-oxadiazol-3-yl; or

(C₁₋₄)alkyl optionally substituted or ethenyl substituted with any of the substituents listed above for R³ and up to 3 groups for R¹² independently selected from:

thiol; halogen; (C₁₋₆)alkylthio; trifluoromethyl; azido; (C₁₋₆)alkoxycarbonyl; (C₁₋₆)alkylcarbonyl; (C₂₋₆)alkenyloxycarbonyl; (C₂₋₆)alkenylcarbonyl; hydroxy optionally substituted by (C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl, (C₂₋₆)alkenylcarbonyl or aminocarbonyl, wherein the amino group is optionally substituted by (C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkylcarbonyl or (C₂₋₆)alkenylcarbonyl; amino optionally mono- or disubstituted by (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl, (C₂₋₆)alkenylcarbonyl, (C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkylsulphonyl, (C₂₋₆)alkenylsulphonyl or aminocarbonyl, wherein the amino group is optionally substituted by (C₁₋₆)alkyl or (C₂₋₆)alkenyl; aminocarbonyl,

wherein the amino group is optionally substituted by (C₁₋₆)alkyl, hydroxy(C₁₋₆)alkyl, aminocarbonyl(C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl or (C₂₋₆)alkenylcarbonyl and optionally further substituted by (C₁₋₆)alkyl, hydroxy(C₁₋₆)alkyl, aminocarbonyl(C₁₋₆)alkyl or (C₂₋₆)alkenyl; oxo; (C₁₋₆)alkylsulphonyl; (C₂₋₆)alkenylsulphonyl; or (C₁₋₆)aminosulphonyl, wherein the amino group is optionally substituted by (C₁₋₆)alkyl or (C₂₋₆)alkenyl; in addition when R³ is disubstituted with a hydroxy or amino containing substituent and carboxy containing substituent these may together form a cyclic ester or amide linkage, respectively; or

when R³ is in the 3- or 4-position it may with R² or R⁴ form a C₃₋₅ alkylene group optionally substituted by a group R⁵ selected from:

(C₁₋₁₂)alkyl; hydroxy(C₁₋₁₂)alkyl; (C₁₋₁₂)alkoxy(C₁₋₁₂)alkyl; (C₁₋₁₂)alkanoyloxy(C₁₋₁₂)alkyl; (C₃₋₆)cycloalkyl; hydroxy(C₃₋₆)cycloalkyl; (C₁₋₁₂)alkoxy(C₃₋₆)cycloalkyl; (C₁₋₁₂)alkanoyloxy(C₃₋₆)cycloalkyl; (C₃₋₆)cycloalkyl(C₁₋₁₂)alkyl; hydroxy-, (C₁₋₁₂)alkoxy- or (C₁₋₁₂)alkanoyloxy-(C₃₋₆)cycloalkyl(C₁₋₁₂)alkyl; cyano; cyano(C₁₋₁₂)alkyl; (C₂₋₁₂)alkenyl; (C₂₋₁₂)alkynyl; tetrahydrofuryl; mono- or di-(C₁₋₁₂)alkylamino(C₁₋₁₂)alkyl; acylamino(C₁₋₁₂)alkyl; (C₁₋₁₂)alkyl- or acyl-aminocarbonyl(C₁₋₁₂)alkyl; mono- or di-(C₁₋₁₂)alkylamino(hydroxy) (C₁₋₁₂)alkyl; optionally substituted phenyl(C₁₋₁₂)alkyl, phenoxy(C₁₋₁₂)alkyl or phenyl(hydroxy)(C₁₋₁₂)alkyl; optionally substituted diphenyl(C₁₋₁₂)alkyl; optionally substituted phenyl(C₂₋₁₂)alkenyl; optionally substituted benzoyl or benzoyl(C₁₋₁₂)alkyl; optionally substituted ~~heteroaryl~~ or heteroaryl(C₁₋₁₂)alkyl; and optionally substituted heteroaroyl or heteroaroyl(C₁₋₁₂)alkyl;

wherein phenyl, benzoyl, heteroaryl and heteroaroyl groups are optionally substituted with up to five groups selected from halogen, mercapto, (C₁₋₆)alkyl, phenyl, (C₁₋₆)alkoxy, hydroxy(C₁₋₆)alkyl, mercapto (C₁₋₆)alkyl, halo(C₁₋₆)alkyl, hydroxy, optionally substituted amino, nitro, carboxy, (C₁₋₆)alkylcarbonyloxy, (C₁₋₆)alkoxycarbonyl, formyl, and (C₁₋₆)alkylcarbonyl groups;

R⁴ forms a group with R³ as above defined, or is a group -CH₂-R⁵ where R⁵ is as defined above:

n is 0, 1 or 2;

A is NR¹¹ or CR⁶R⁷ and B is NR¹¹, O, SO₂ or CR⁸R⁹; and wherein:

each of R⁶, R⁷, R⁸ and R⁹ is independently selected from: hydrogen; (C₁₋₆)alkylthio; halo; trifluoromethyl; azido; (C₁₋₆)alkyl; (C₂₋₆)alkenyl; (C₁₋₆)alkoxycarbonyl; (C₁₋₆)alkylcarbonyl;

(C₂₋₆)alkenyloxycarbonyl; (C₂₋₆)alkenylcarbonyl; hydroxy, amino or aminocarbonyl optionally substituted as for corresponding substituents R¹² as defined in R³;
(C₁₋₆)alkylsulphonyl; (C₂₋₆)alkenylsulphonyl; or (C₁₋₆)aminosulphonyl, wherein the amino group is optionally substituted by (C₁₋₆)alkyl or (C₁₋₆)alkenyl;
or R⁶ and R⁸ together represent a bond and R⁷ and R⁹ are as above defined;
or R⁶ and R⁷ or R⁸ and R⁹ together represent oxo;
provided that:

when A is NR¹¹, B is not NR¹¹, O or SO₂;
when A is CO, B is not CO, O or SO₂;
when n is 0 and A is NR¹¹, CR⁸R⁹ can only be CO;
when A is CR⁶R⁷ and B is SO₂, n is 0;
when n is 0, B is not NR¹¹ or O; and
when A-B is CR⁷=CR⁹, n is 1 or 2;

R¹⁰ is selected from (C₁₋₄)alkyl; (C₂₋₄)alkenyl and aryl, each of which is optionally substituted by a group R¹² as defined above; carboxy; aminocarbonyl, wherein the amino group is optionally substituted by hydroxy, (C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkylsulphonyl, trifluoromethylsulphonyl, (C₁₋₆)alkenylsulphonyl, (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl or (C₂₋₆)alkenylcarbonyl and optionally further substituted by (C₁₋₆)alkyl or (C₂₋₆)alkenyl; (C₁₋₆)alkylsulphonyl; trifluoromethylsulphonyl; (C₁₋₆)alkenylsulphonyl; (C₁₋₆)alkoxycarbonyl; (C₁₋₆)alkylcarbonyl; (C₂₋₆)alkenyloxycarbonyl; and (C₂₋₆)alkenylcarbonyl;

R¹¹ is hydrogen; trifluoromethyl, (C₁₋₆)alkyl; (C₁₋₆)alkenyl; (C₁₋₆)alkoxycarbonyl; (C₁₋₆)alkylcarbonyl; aminocarbonyl, wherein the amino group is optionally substituted by (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₁₋₆)alkenyloxycarbonyl, (C₂₋₆)alkenylcarbonyl, (C₁₋₆)alkyl or (C₁₋₆)alkenyl and optionally further substituted by (C₁₋₆)alkyl or (C₁₋₆)alkenyl.

2 (Original). A compound according to claim 1 wherein:

- (a) Z¹ is N, and Z²-Z⁵ are CH,
- (b) Z¹-Z⁵ are each CH, or
- (c) Z⁵ is N, and Z¹-Z⁴ are CH.

Claims 3-10. (Cancelled)

11 (Original). A compound according to claim 1 wherein R¹ and R^{1a} are independently methoxy, amino(C₃₋₅)alkyloxy, guanidino(C₃₋₅)alkyloxy, piperidyl(C₃₋₅)alkyloxy, nitro or fluoro.

12 (Previously Presented). A compound according to claim 1 wherein R³ is hydrogen; optionally substituted aminocarbonyl; optionally substituted (C₁₋₄)alkyl; carboxy(C₁₋₄)alkyl; optionally substituted aminocarbonyl(C₁₋₄)alkyl; cyano(C₁₋₄)alkyl; optionally substituted 2-oxo-oxazolidinyl or optionally substituted 2-oxo-oxazolidinyl(C₁₋₄alkyl).

13 (Original). A compound according to claim 1 wherein R³ is in the 3-position and the substituents at the 3- and 4-position of the piperidine ring are *cis*.

14 (Original). A compound according to claim 1 wherein A is NH and B is CO, or A is CHOH and B is CH₂.

15 (Original). A compound according to claim 1 wherein R¹¹ is hydrogen.

16 (Original). A compound according to claim 1 wherein R⁴ is (C₅₋₁₂)alkyl, optionally substituted phenyl(C₂₋₃)alkyl or optionally substituted phenyl(C₃₋₄)alkenyl.

17 (Previously Presented). A pharmaceutical composition comprising a compound of formula (I) as defined in claim 1, or a pharmaceutically acceptable salt or N-oxide thereof, and a pharmaceutically acceptable carrier.

18 (Previously Presented). A method of treating bacterial infections in mammals caused by *S. aureus* and *S. pneumoniae* organisms, which comprises administering to a mammal in need thereof an effective amount of a compound of formula (I) as defined in claim 1, or a pharmaceutically acceptable salt or N-oxide thereof.

19 (Previously Presented). The compound according to claim 1, wherein the compound is:

4-Heptylamino-1-(6-methoxy-[1,5]-naphthyridin-4-yl)aminocarbonylpiperidine ;

4-Heptylamino-4-methoxycarbonyl-1-(6-methoxy-[1,5]-naphthyridine-4-yl)aminocarbonylpiperidine ;or

4-Heptylamino-4-hydroxymethyl-1-(6-methoxy-[1,5]-naphthyridine-4-yl)aminocarbonylpiperidine .